



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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March 27, 2009

Dr. Susan I. Rees
Project Manager
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Mobile District
P.O. Box 2288
Mobile, AL 36628-0001

Subject: EPA's NEPA Review of the COE's Draft Programmatic Environmental Impact Statement (DPEIS) for the "Mississippi Coastal Improvements Program (MsCIP)" Draft Comprehensive Plan and Integrated Programmatic Environmental Impact Statement (February 2009); Hancock, Harrison, and Jackson Co, MS; CEQ# 20090034; ERP# COE-E39075-MS

Dear Dr. Rees:

Pursuant to Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) Region 4 has reviewed the U.S. Army Corps of Engineers' (COE: Mobile District) Draft Comprehensive Plan and Integrated Programmatic Environmental Impact Statement (DPEIS = Draft Comprehensive Plan). The DPEIS consists of a main document and eleven appendices (A-K).¹ As a Cooperating Agency, EPA has participated in various meetings and site visits preceding the issuance of this DPEIS. These included Regional Coordination Meetings for scoping in 2006, Risk Analysis Workshops in 2007, a web-based feedback and participation forum in 2007, and wetland field reconnaissance site visits and interagency project deliberations. These meetings and site visits were attended by our Water Protection Division (WPD) and NEPA Program Office.

We commend the COE for their extensive scoping, planning and coordination of this project with federal, state and local agencies as well as non-governmental organizations (NGOs), universities, stakeholders and the general public. Moreover, we also appreciate the project status briefings presented by the COE's South Atlantic Division (SAD) and the coordination provided by EPA's Office of Water in Washington, DC and our Gulf of Mexico Program (GMP) in Mississippi.

Project Overview

The Draft Comprehensive Plan addresses recent (2005-2006) hurricane and storm damage (Katrina, Rita and Cindy) in Hancock, Harrison, and Jackson Counties through

¹ Unless otherwise noted, references in this letter to page numbers, figures and tables are from the MsCIP main document as opposed to its appendices.

the implementation of several projects and the further study and NEPA review of others. Specifically, we note the study of ecosystem restoration of wetlands, fish and wildlife preservation, eroded coastlines and saltwater intrusion; the purchase or flood-proofing of properties in high hazard zones to change their land use; the overall reduction of "...the vulnerability of the region to a recurrence of similar natural disasters" (pg. S-2); and the policy that reduction measures for hurricane/storm damage were provided "...without encouraging re-development in high-risk areas" (pg. S-3). EPA supports the restoration goals of the MsCIP and the overall approach to achieve them taken by the Mobile District. Although we understand that the purpose and need of the MsCIP is not limited to post-hurricane restoration, it is those restoration project components of the MsCIP that we principally support.

The Draft Comprehensive Plan recommends several projects for advanced design and implementation for the COE's "Record of Decision (ROD) for construction". The NEPA requirements for these MsCIP projects are to be met by the PEIS and ROD documents. Page S-3 lists these projects as:

- Coastal Wetland and Forest Restoration (Turkey Creek, Bayou Cumbest, Dantzler, Admiral Island, Franklin Creek)
- Submerged Aquatic Vegetation (SAV) Pilot Project
- Coast-wide Beach and Dune Restoration on Mainland Beaches
- Moss Point Municipal Structure Relocation
- Waveland Flood Proofing Pilot Project
- Forrest (or Forest) Heights Hurricane and Storm Damage Reduction.

In addition to these projects, the restoration of Deer Island may also be ready for construction, although additional NEPA documentation tiering from this PEIS may be needed. The Draft Comprehensive Plan also supports two other projects for construction, subject to additional site-specific study and supplemental NEPA review. These are the 1) High Hazard Area Risk Reduction Plan (near-term HARP) and the 2) Barrier Islands Restoration Plan. HARP entails the land purchase of vulnerable storm-prone coastlands to restrict their redevelopment while the Barrier Islands Restoration Plan involves sand renourishment of the Mississippi barrier islands as a first line of defense to the coastal mainland. We strongly agree that these plans would benefit from additional study of societal issues and sand migration. Beyond these additional studies, the MsCIP also supports the construction of a freshwater diversion project at Violet, Louisiana (per the Water Resources Development Act (WRDA) of 2007), which would provide additional freshwater inflows to the Mississippi Sound for the support of healthy oyster reefs. Finally, there are also other system-wide elements of the Draft Comprehensive Plan proposing the additional long-term HARP land purchases over the next 20-40 years, additional damage reduction alternatives, the coastal Mississippi ecosystem reduction program, and the Escatawpa River freshwater diversion project. Although these projects are currently not being presented for construction by the MsCIP, the PDEIS considers them as reasonably foreseeable in the cumulative effects analysis. Since hurricane damage was not limited to Mississippi, the MsCIP is being conducted concurrently with the Louisiana Coastal Protection and Restoration (LaCPR), which primarily addresses

damage to the Louisiana coast. The MsCIP and LaCPR are separate but coordinated EIS projects.

The Mississippi coastline was divided into five logical lines of defense (Chap. 3) that were considered for armoring (hardening), with each line being considered for a different structural component. The first line of defense was the outer edge of the barrier islands (which would be renourished); the second was the mainland berm and dune system (which would also be restored); the third was an elevated seawall; the fourth was an inland barrier with surge gates; and the fifth was the existing railroad along the coastline which was expected to be the limits of a hurricane surge (the railroad bed would be raised). Although considered, these structural components were not implemented with three exceptions: barrier island renourishment, beach sand dune restoration, and limited ring levee application.

Although we support with the use of structural components where necessary for public safety and for the proposed island and dune restorations, EPA prefers non-structural projects designed to develop a coastline that is more resilient to future storm events. For the MsCIP, these included proposed or future floodplain management of high-risk areas in various coastal zones (i.e., from the coastline to higher elevations) including the generation of a risk zones map of the Mississippi coastline, land purchases of high-risk areas, and relocations from high-risk areas to higher elevations, building and zoning codes, and hurricane evacuation planning (pg. 5-1). To complement these, we suggest adding the conversion of high-risk areas to more storm-compatible land uses such as coastal greenspace areas (e.g., greenways/parks), and the ecosystem restoration of coastal areas to wetlands and other coastal ecotones resembling the historic (e.g., pre-Hurricane Camille) Mississippi coastline.

COE Scoping & Planning

The Mobile District should be commended for their scoping and planning process to address the Congressional mandate (Department of Defense Appropriations Act of 2006).. The scoping allowed the development of sustainable coastal improvement elements that were visionary. The planning process allowed for a true integration of the natural ecosystems and the services they provide along with man's alterations of the landscape resulting from habitation adjacent to the Gulf of Mexico.

This scoping framework embraced non-structural, local-decisional considerations for planning land uses, and structural alternatives which were then evaluated on an even basis. The collected coastal improvement elements were continuously shared with the stakeholders resulting in the identification of improvements and collection of the more effective and efficient elements. A fundamental precept of this method embraced the long term commitment of resources that would be required for the operation and maintenance of the various elements evaluated. The majority of the final selected coastal improvement elements were those that were self sustaining, required the least amount of resources, and had limited "side effects" (i.e., those secondary actions that

are interrelated or interdependent to the original element and usually require further resources necessary for operation and maintenance).

The MsCIP is an exemplary case where the Mobile District fully embraced and implemented the U.S. Army's *Environmental Operating Principles* (EOP). The EOP's keys were integrated from conception to completion through the BALANCE process, i.e., Building and sharing knowledge, Accepting corporate responsibility, Listening to and learning from the stakeholders, Assessing and mitigating the impacts, Negotiating environmental and economic solutions, Considering the consequences, and Encouraging environmental sustainability.

Project Impacts

The damage from the series of hurricanes/storms in coastal Mississippi and adjacent areas was significant due to increased frequency and intensity of wind and tidal action. Ecosystem impact areas included bird populations (e.g., barrier island nesting habitat), shrimp and fish stocks (Mississippi Sound), shorelands (beaches and dune habitat), saltwater and freshwater wetlands (e.g., wet pine savannah), water quality (estuarine and riverine), and terrestrial habitats (e.g., coastal forests). Destruction of homes and infrastructure was also extensive. From an environmental perspective, EPA is primarily concerned about water quality issues such as spill contamination (surge) and turbidity/sedimentation, loss of wetlands and saltwater contamination (surge and salt spray) of shoreland freshwater wetlands, barrier island and mainland beach erosion (surge over-wash and scour), overall loss of habitat (significant wind and tidal action), and the risk to public health and safety.

The present DPEIS is primarily a restoration EIS to repair some of these impacts and help prevent future hurricane/storm damage. Given these positive restoration impacts, the DPEIS principally differs from conventional EISs with negative impacts that require mitigation. Accordingly, most of the effects of the MsCIP projects are restoration benefits rather than impacts. A compilation of EPA's comments and suggestions to further improve the proposed projects during the COE's development of the Final PEIS (FPEIS) and the Final Comprehensive Plan is included in our enclosed *Detailed Comments*. We also offer the following EPA conclusions and recommendations for the MsCIP.

EPA Conclusions & Recommendations

EPA supports the restoration goals of the MsCIP and overall innovative approach taken by the Mobile COE to achieve them. Our conclusions and recommendations for the proposed MsCIP projects are summarized as follows:

- ***Overview*** – *The COE should be commended for its consideration and tentative selection (Chap. 5) of several non-structural alternatives for the restoration of coastal Mississippi.* EPA finds that the MsCIP NEPA document considered more

non-structural alternatives than perhaps any other COE document Region 4 has reviewed.

- **Purpose & Need** – *EPA recommends that the focus of the MsCIP remain on the post-hurricane restoration of the Mississippi coastline with a significant non-structural component.* Although the FPEIS should clarify this, we understand that the purpose and need of the MsCIP is not limited to hurricane/storm restorations (e.g., WRDA freshwater diversion study at Violet, LA). Nevertheless, because of the broad scope/expense of hurricane/storm restoration in Mississippi – and because project funding has not yet been secured and may be competitive – we recommend that the focus of the MsCIP remain on the post-hurricane restoration of the Mississippi coastline more so than other regional ecosystem projects that are not the direct result of damage from Hurricanes Katrina, Rita and Cindy.
- **Non-Structural Alternatives** – *EPA recommends that non-structural alternatives be implemented along the Mississippi coastline (as well as other Gulf of Mexico state coastlines) where appropriate to avoid additional hurricane/storm damage.* We particularly support floodplain management to delineate the mapped locations of high-, moderate- and low-risk zones (Fig. 5-1), land purchases in high-risk areas (HARP) to convert their land use to be more compatible with areas vulnerable to storms, the creation of coastal greenways/parks and areas of coastal ecosystem restoration to resemble their historic ecotones, the relocation of people and their homes/communities to higher elevations to achieve a lower storm risk, and the rezoning of high-risk areas. To a lesser degree, we also support measures such as home elevations and flood insurance; however, these options encourage redevelopment in high-risk areas and may foster a potential false sense of security.
- **Structural Alternatives** – *Although there may be exceptions, EPA does not recommend the construction of ring levees.* EPA recognizes that certain structural alternatives can improve protection against hurricane/storm damage and are advisable. However, the heights of future storm surges are difficult to predict so that the actual security of such armoring structures remains uncertain. Accordingly, EPA typically recommends relocations (buyouts) rather than construction of structural ring levees (ring levees are costly to build/maintain and may fill wetlands, must be serviced by an elevated access road, and do not eliminate the need for evacuation) to relocate people to higher elevations on the COE's risk zones map (Fig. 5-1) and to discourage redevelopment in high-risk areas. EPA does not recommend the construction of ring levees, including those listed in Table 5-2. However, Forest Heights may be an exception, given the fact that the levee already exists there and the residents would like for it to remain in place. Also, for unwilling sellers, horseshoe levees would be more preferable than ring levees because they are located at higher elevations and evacuations to higher ground roadways exist.
- **COE Project Decisions** – *Although EPA typically recommends non-structural over structural alternatives, we also defer to the COE and local governments*

relative to the overall benefits and safety of restoration projects in the context of the local setting. As a cooperating agency to the COE for this PEIS, we request that the COE consider our general preference for non-structural options during their finalization of their FPEIS and Final Comprehensive Plan. At the same time, however, we also give deference to the COE and local governments for the site-specific implementation of restoration projects. For example, a combination of non-structural and structural alternatives could be meaningful on a case-by-case basis. Also on a case-by-case basis, the Clean Water Act (CWA) 404(b)(1) Guidelines (Guidelines) are expected to be very meaningful with specific focus on the project alternatives analysis (which may include the non-structural alternatives) and in the avoidance, minimization and compensatory mitigation process. EPA strongly encourages the Mobile District to evaluate compensatory wetland mitigation within the watershed, especially when the project is within the watershed of an existing impaired water body.

- **COE Section 404 Permit Decisions for High-Risk Areas – The COE’s CWA section 404 permit program should be coordinated to be consistent with the COE’s recommendations in this DPEIS.** EPA recommends that the COE use the maximum flexibility within the CWA Guidelines to restrict approvals of CWA section 404 permits in designated high-risk areas for life and structure, especially for non-water-dependent project purposes. Such strict adherence to the Guideline’s full application of alternatives analysis, optimized avoidance and minimization applied, and compensatory mitigation that replaces the ecosystem services in the watershed impacted, together with the COE’s risk zone map (pg. 5-5) and zoning codes (pg. 5-6), could discourage the development or redevelopment of these vulnerable areas. To address permitting for high-risk areas, we recommend that new sections be added to the main document (5.17.8) as well as in the Environmental Appendix A (ES-2.1) in the FPEIS.
- **Barrier Islands Restoration – We believe that restoring the chain of four Gulf Islands National Seashore barrier islands (Cat, Ship, Horn and Petit Bois Island) in the Mississippi Sound has considerable merit from both a storm protection and Gulf Sound/Barrier Islands ecosystem perspective.** We also strongly support that additional study be conducted as planned. These studies should finalize the sediment (sand) source, volume and quality needed to efficiently “feed” the islands to achieve the appropriate renourishment to optimize ecological features and mainland protection. Modeling for the offshore sediment mining sites and disposal sites (plume and water quality) should also be finalized. Moreover, from a regional perspective, it should be emphasized that dredging and sediment removal projects upstream of these islands could reduce the volume of sediment available in the system (littoral drift zone) that naturally renourishes the islands. As such, the approval and management of such dredging projects would appear to be critical to future island maintenance. The COE should first consider sands from “new work” dredging for use on the renourishment of the Barrier Islands, as opposed to offshore disposal of sands at an Ocean Dredged Material Disposal Site (ODMDS) or other

options. EPA also supports the restoration of Deer Island, a nearshore barrier island.

- **Draft Comprehensive Plan Projects** – *Given EPA's full involvement during project scoping, analysis and interagency deliberation, we generally find the MsCIP projects ready for construction to be acceptable as proposed for the restoration of coastal Mississippi.* Nevertheless, the comments and recommendations offered in this NEPA comment letter should be applied where appropriate.
- **Turkey Creek** – *EPA recommends that the COE expand the proposed restoration at Turkey Creek.* Specifically, the four objectives listed on the second un-numbered page (or page 345 of 420 for a CD Adobe Reader) in Section 1.4.5 (*Turkey Creek Restoration Benefits*) of the Environmental Appendix (A) should include a fifth objective: *5. Restore and maintain State water quality.* Since Turkey Creek is listed as an impaired water body on the State of Mississippi's 303(d) list for fecal, pH and biology parameters of concern, we recommend that the maximum restoration activities for this project emphasize assistance in restoring the biological impact areas while maintaining water quality parameters. Also, recent mitigation efforts for a Mississippi Department of Transportation (MDOT) project are underway in the Turkey Creek watershed that significantly encompasses the area considered within the MsCIP project. EPA recommends that the Mobile District coordinate efforts with the Mississippi Department of Marine Resources (MDMR) Coastal Preserve Program and the Land Trust for the Mississippi Coastal Plain (Land Trust) to enhance restoration efforts in Turkey Creek. Preliminary maps of areas proposed for MDOT mitigation and community greenways as well as other comments related to Turkey Creek are included in the *Detailed Comments*.
- **Saltwater Intrusion** – *EPA offers that the study of the saltwater intrusion component could be somewhat de-emphasized for MsCIP projects in favor of other more significant impacted areas.* Unlike the well-documented issues with saltwater intrusion in Louisiana (LaCPR), EPA believes that there are no projects in Mississippi that warrant action primarily due to saltwater intrusion – when traditionally defined as the migration of saltwater upstream in coastal rivers and upgradient in groundwater. However, we agree that hurricane surges raised the salinity of Mississippi Sound and storm surges and salt sprays resulted in some coastal freshwater wetlands becoming brackish.
- **Long-Term HARP** – *Although long-term HARP may not be implemented due to extensive buyout costs and disruptive relocations, EPA recommends to nevertheless consider land acquisitions and buyouts in areas of high-risk.* That is, even though such wholesale community relocations are likely disruptive, hurricane damage to such vulnerable areas is also (if not more) disruptive to the same community. As previously discussed, the option of a ring levee construction would also be expensive to build/maintain and would not eliminate the need for evacuation. The proposal for additional study and supplemental NEPA review

might compare such costs. However, if such massive relocations of communities or towns do eventuate, we recommend that the buyouts encompass whole communities to limit their segmentation and societal disruption. We also believe that the proposed further study of near- and long-term HARP projects has merit from a societal impact perspective.

- **Implementation & Additional NEPA** – *In order to avoid/minimize additional harm to the Mississippi coastlands from potential future storm events, we encourage the expedited but sound implementation of the MsCIP projects nearing construction from a design and NEPA perspective.* We also encourage the completion of the additional NEPA reviews tiering from this PEIS for the other restoration projects (e.g., Barrier Islands Restoration Plan) considered in the MsCIP – to the extent those reviews determine which of these projects merit implementation. Project monitoring and use of adaptive management practices is advised to help insure success.
- **Final Comprehensive Plan Application** – *The “lessons learned” from the Final Comprehensive Plan should be broadly applied to other local federal projects as well as the Gulf of Mexico coastline in general.* Interagency coordination of the Plan should be conducted with the sponsors of other federally-funded and/or federally-permitted projects in Mississippi that may be proposed for high-risk areas so that they may be relocated, if possible, to areas of lower risk. Plan application with the federal, state and local governments of other states along the Gulf of Mexico is also recommended.

Summary & Rating

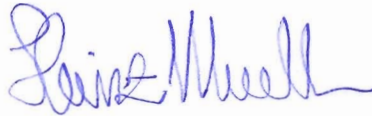
EPA rates this DPEIS as “LO” (Lack of Objections), although we request that our comments and recommendations on this DPEIS be addressed in the development of the FPEIS, Final Comprehensive Plan and ROD. Overall, we support the objectives of the MsCIP’s Draft Comprehensive Plan and the Mobile District’s tentative selection of non-structural alternatives and certain structural alternatives. We particularly support the non-structural components of floodplain management (coastal risk zones map) and the prospective HARP purchase of lands in high-risk areas, as well as the structural components of renourishing the barrier islands and the mainland beach dunes. However, additional HARP societal studies and barrier island renourishment modeling are advised. We also encourage the District’s continued selection of appropriate non-structural components in the FPEIS and Final Comprehensive Plan. In addition, we wish to emphasize the following:

- **Greenspace** – To help protect life and structure, high-risk areas should be converted to more storm-compatible land uses such as coastal greenways/parks, and the ecosystem restoration of coastal areas to wetlands and other coastal ecotones resembling the historic Mississippi coastline.

- Section 404 Permitting – The COE’s Section 404 permitting process should be coordinated to be consistent with the objectives of this PEIS by discouraging redevelopment or development in designated high-risk areas.
- Final Comprehensive Plan Application – The “lessons learned” from the Final Comprehensive Plan should be broadly applied to other local federal projects in Mississippi as well as other states along the Gulf of Mexico coastline through interagency coordination in order to share “best practices”.
- Implementation & Management – The planned additional studies, NEPA reviews and actual improvement plans/projects should be expeditiously implemented, followed by monitoring and adaptive management to help ensure success.

EPA appreciates the opportunity to review the DPEIS and the Mobile COE’s coordination with us. Where appropriate, we wish to offer our assistance for the expeditious implementation and application of the Final Comprehensive Plan. Should you have any questions, feel free to contact Ntale Kajumba at 404/562-9620 (kajumba.ntale@epa.gov) or Chris Hoberg at 404/562-9619 (hoberg.Chris@epa.gov) of my staff and Duncan Powell at 404/562-9258 (powell.duncan@epa.gov) in the Region 4 Water Protection Division for wetland issues.

Sincerely,



Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management

Enclosure: *Detailed Comments* (including Figures 1-3)

- Fig. 1: *Land (1,625 ac) Proposed for Acquisition and Mitigation in Turkey Creek by MDOT.*
- Fig. 2: *Land identified for a Proposed Greenway Initiative in the Turkey Creek Watershed (Land Trust and Turkey Creek Community).*
- Fig. 3: *Land Already Purchased by Land Trust within the Turkey Creek Watershed.*

cc: Mr. Claiborne Barnwell – MDOT: Jackson, MS
Mr. Jeff Clark – MDMR: Biloxi, MS
Mr. David Felder – USFWS: Daphne, AL
Brig. Gen. Joseph Schroedel – COE/SAD: Atlanta, GA
Ms. Judy Steckler – Land Trust: Biloxi, MS
Mr. Dickie Walters – FHWA: Jackson, MS

DETAILED COMMENTS

MAIN DOCUMENT

* **Table S-2 (pg. S-6)** – Project effects information for the proposed MsCIP projects are tabularized in Table S-2. Although we recognize that Table S-2 is intended as a summary table while tables in Chapter 3 are more expanded versions, we note that a “Category of Effects” for wetlands was not provided in Table S-2. Because of the significance of wetland restoration to the MsCIP, we suggest a footnote for Table S-2 and/or discussion in the text clarifying that restoration of various wetland types are discussed under specific listed projects (e.g., Dantzler and Turkey Creek ecosystem restorations).

* **Purpose & Need (pg. 1-1)** – MsCIP would implement a freshwater diversion project at Violet, Louisiana per the intent of Section 3083 of the Water Resources Development Act (WRDA) of 2007. This project would provide adequate inflows to the Mississippi Sound for healthy oyster reefs. This WRDA project appears somewhat out of place for a restoration project for hurricane/storm damage; however, we understand that not all of the MsCIP projects are limited to hurricane/storm restoration. Nevertheless, in the FPEIS, the purpose and need section should clarify this and discuss the rationale for including other projects within MsCIP that are not reactive to Hurricanes Katrina, Rita and Cindy damage.

* **New FPEIS Section 5.17.8 (pg. 5-7)** – Under Section 5, *Description of Tentatively Selected Comprehensive Plan Components*, we suggest that a new Section 5.17.8 could be added to discuss the section 404 permit program. This new section could make the following recommendations: 1) that the federal permitting program use the flexibility within the CWA section Guidelines to their fullest extent, using the information found within this document, the references within, and Environmental Appendix A to ensure that only water-dependent projects be located in the high-risk zones, 2) that these projects go through the maximum review allowed by law to ensure that there are no other upland alternatives, 3) that the waters of the United States within the high-risk areas be avoided to the maximum allowed by law, 4) that the project minimize to the greatest extent allowed by law for impacts to waters of the United States within the high-risk areas, and 5) that any compensatory mitigation replace the ecological services that protect humans from flooding and storm surges. In essence, this new section in the FPEIS would be an analysis of the permits issued by the Mobile District that were in the high-risk areas, identify where the mitigation areas for these permits were located, and recommend that essentially only water dependent projects would be permitted in these high-risk areas.

► ENVIRONMENTAL APPENDIX A

* **Saltwater Intrusion** – Saltwater intrusion is traditionally defined as the migration of saltwater upstream in coastal rivers and upgradient in groundwater. Accordingly, EPA currently believes that there are no projects in Mississippi which warrant action primarily due to saltwater intrusion, although we agree that hurricane surges raised the salinity of Mississippi Sound and storm surges and salt sprays resulted in some coastal freshwater wetlands becoming brackish. Saltwater intrusion could be a significant issue if freshwater diversions occur on the mainland or there is a significant change to the barrier islands. Unlike the well-documented issues with saltwater intrusion in Louisiana, this particular component is not as important in Mississippi. Therefore, at this time, we do not agree with the importance of the sixth bullet on page ES-5 (or page 14 of 420 for a CD Adobe Reader) under Section ES-4.1.1.1 in the Environmental Appendix (A) which states: “Recommend implementable projects directed at either the stabilization or retreat of saltwater intrusion in the coastal zone exacerbated by the hurricanes, and to examine opportunities for minimization of saltwater intrusion during future events.” We base our concern on the fact that hurricanes are natural events, minimal diversions of freshwater have been documented in Mississippi causing saltwater intrusion; no drinking water wells have shown increased conductivity, no freshwater systems have been replaced by saltwater vegetated systems, and the creation and maintenance of drainage channels along the coast decrease the resistance of saltwater intrusion during storm surges (i.e., the channels flow both ways). There has been no identifiable location where treated sewage effluent would benefit the freshwater head during the last four years of the “wastewater to wetlands” coordinated efforts between EPA Region 4 and Mississippi Department of Environmental Quality (MS DEQ). Relative to saltwater intrusion, we also note the following:

+ **Mississippi Sound**: Saltwater increased salinity has been linked in this document with saltwater intrusion. Significant changes in the hydrology between the Gulf of Mexico and the Mississippi Sound would change the salinity gradient within the sound and may cause ecological changes within the Sound as expressed on page 45, but the link to saltwater intrusion on the mainland is unclear.

+ **Pearl River**: Page 21 (or page 50 of 420 for a CD Adobe Reader) in Section 1.2.2.4 in the Environmental Appendix (A) links the loss of sediment with freshwater flows coming from the Pearl River in western Hancock County. When EPA and MS DEQ evaluated these areas, there may have been edges of major intertidal channels recovering from the temporary saltwater flooding and scouring resulting from the surge, but no large landscape-sized areas for projects of concern at this time.

+ **Hancock County Marsh**: We find that Katrina’s impact is accurately described for this project (page 24, or page 50 of 420 for a CD Adobe Reader, in Section 1.2.2.4.2 of the Environmental Appendix A). The physical barrier (sand dune) that allowed freshwater marsh to exist was breached by Katrina, the freshwater marsh was significantly impacted by saltwater intrusion and the breach shows no sign of natural closure.

* **Wetland Restoration** – We strongly support lines 13 and 14 on page 162 (or page 191 of 420 for a CD Adobe Reader) in the category entitled *Advanced Design Studies for Innovative Concepts* in Section 5.6.5 of the Environmental Appendix (A), which state: *Wetland Restoration along main drainage systems to increase capacity of flood storage during rainfall and storm events.* However, we strongly disagree with lines 13-15 on page 18 (or page 291 of 420 for a CD Adobe Reader) in Section 3.1 *Environmental Effects* which states: *Public Safety – It is anticipated there would be minimal positive effects to public safety by implementation of this measure as wetland restoration would benefit water quality, wildlife habitat, and various natural resource functions.* Because we believe there would be public safety benefits, this paragraph should be replaced with:

Public Safety – It is anticipated there would be intrinsically significant positive effects to public safety by implementation of this measure as wetland restoration would displace humans and capital improvements preventing loss of life and allowing “attractive nuisances” from luring people into high-risk areas and increasing the economic loss of capital improvements within high-risk areas. Wetland restoration would also benefit water quality, wildlife habitat, and various natural resource functions.

* **Section 404 Permitting Decisions for High-Risk Areas** – To complement the prospective permitting recommendations in new Section 5.17.8, a reference to the COE’s permitting decisions for high-risk areas could also be added in Appendix A. This discussion might also be included in Section ES-2.1 (*Problems and Opportunities*) on page ES-1 (or page 10 for a CD Adobe Reader) of the Environmental Appendix (A) addressing problems and opportunities to underscore the CWA Section 404 Permitting Program. Specifically, we recommend an expansion of the final paragraph on page ES-2, i.e., adding the following second sentence:

The Federal government should to its fullest extent support the Governor’s guidance with the CWA section 404 permitting program by fully integrating to the maximum extent of the CWA 404(b)(1) to support this direction, especially in high-risk areas.

* **Turkey Creek Ecosystem Restoration (Sec. 5.18.6.1)** – Turkey Creek is located in north Gulfport within the impaired Turkey Creek Watershed. This watershed is classified as a priority watershed by the State of Mississippi and EPA. According to the DPEIS, the area is “becoming increasingly urbanized and development pressures are resulting in increased wetland degradation and loss by direct filling with the incumbent decrease in flood storage capacity.” The area proposed for restoration is an 880-acre site of primarily undeveloped land. It contains a railroad berm that runs east-west, dirt road paths, and several miles of drainage ditches. The Draft Comprehensive Plan indicates that 689 acres are south and 190 acres are north of the existing railway. The area is made up primarily of pine savannah wetlands. The recommended plan includes the restoration of 689 acres of undeveloped land south of the railroad berm. The restoration will include filling the previously drained ditches, excavating and removing existing roadbeds and associated fill, and maintaining vegetative growth by burning the project area (mow and burn).

In an unrelated project within the Turkey Creek Watershed, MDOT recently agreed to purchase approximately 1,625 acres within the Turkey Creek Watershed as part of a mitigation package for impacts related to the proposed Interstate 10 connector. Much of the area proposed for MsCIP restoration may be included within this mitigation area. We have enclosed a copy of a preliminary map overlaying the areas proposed for MDOT purchase for the COE's consideration (Fig. 1). The entire area will be managed by the MDMR in their Coastal Preserves Program and the Land Trust will maintain the right to manage and coordinate the conservation and management of a portion of the property. While MDOT will purchase the property, additional funding and support will be needed to help restore the functions of the wetland. EPA recommends that the MsCIP coordinate with the MDMR Coastal Preserve Program and the Land Trust on this restoration effort.

In addition, EPA suggests that the MsCIP use this as an opportunity to expand the restoration effort in this area (i.e., eastward) given that MDOT has already agreed to purchase some of the acreage proposed in this plan. As the Draft Comprehensive Plan clearly notes, Turkey Creek and its communities are facing ongoing development pressure and have experienced severe storm and hurricane damage in the recent past. The MsCIP Draft Comprehensive Plan, communities of Turkey Creek and the Land Trust have identified areas within the Turkey Creek Watershed for restoration to further reduce future flood and hurricane damage. We have enclosed a map of the proposed greenway (Fig. 2) and the already purchased portion of the greenway (Fig. 3) for your consideration.

*** Forest (Forrest) Heights Alternative (Sec. 4.15 and 5.184)** – The community of Forest (Forrest) Heights, a historical African-American community located within the Turkey Creek floodplain, experienced flood and hurricane damage during Hurricane Katrina. The community currently has an existing earthen levee (6 ft wide and 16.5 ft high, NGVD) that was damaged during Hurricane Katrina and does not meet current standards for certification based on FEMA flood profiles. The Draft Comprehensive Plan proposes to reduce future storm damage to Forest (Forrest) Heights by elevating the levee to 17 feet or 21 feet. EPA does not support levee construction as a viable means of reducing the risk to public health. However Forest (Forrest) Heights maybe an exception, given the fact that the levee already exists and the residents would like it to remain in place. The community should be clear that while this alternative reduces the magnitude of storm and hurricane damage to property, the levees are not intended to be health protective. Therefore, during major hurricane events, there should be a hurricane evacuation strategy in place with which the community is familiar. The proposed 17-foot levee elevation project will impact approximately 19.85 acres of non-tidal wetlands and 23 acres will be impacted by the preferred 21-foot levee. According to the Draft Comprehensive Plan, these impacts will be mitigated within the Turkey Creek Watershed. EPA notes that the Mississippi Land Trust has worked with a number of federal and state resource agencies and communities within Turkey Creek to identify potential mitigation areas, and would therefore be a valuable resource.

*** High Risk Hazard Area Risk Reduction Plan (Sec. 5.17.4) – The Draft**

Comprehensive Plan recommends implementing phase 1 of HARP in the most critical areas. EPA supports the use of the maps to identify the risk zones and maximum probable intensity surge (MPI). We also support the necessity for these products for use in federal, state, local and community decision-making and planning. The plan proposes to relocate approximately 2,000 structures or communities within the high-risk areas where owners have not rebuilt. EPA agrees with the COE's assessment that there are numerous advantages to such a program including improved public health and safety (pg. 5-8). Nevertheless, concerns were expressed at public meetings regarding mass community relocation. To alleviate these concerns, opportunities should be created for ongoing communication and meaningful public involvement regarding the recommended proposal. The Long-Term HARP recommendation targets structural acquisition and relocation over the next 20-40 years for the benefit of reducing future storm and hurricane damage. EPA supports measures to study these alternatives further. In addition, it would be helpful to incorporate maps of the demographics within the project area (i.e., income, racial composition, etc.) as an additional tool of comparison. These maps should be related to the recommendations proposed and can be incorporated under the sections that relate to risk reduction or environmental justice.

*** Moss Point Municipal Relocation (Sec. 4.13 and 5.18.2) –** The city of Moss Point is located next to the Escatawpa River shoreline in a low-lying, flood-prone area. The city facilities were seriously damaged and municipal services were affected for a significant period of time. Consequently, the Draft Comprehensive Plan proposes to relocate the municipal facilities (i.e., city hall, police station, fire station, community services) to a lower risk site to minimize the potential for future flood damage. It is anticipated that these relocations will occur in largely developed areas. Therefore, minor vegetative, fish and wildlife impacts are anticipated. The current site will be converted to a community greenspace that would buffer the City from the Escatawpa River. According to the Draft Comprehensive Plan, four relocation sites are shown on the Moss Point Relocations Pilot Map (elevation 12.0: Section 5.18.2). The FPEIS (Section 5.18.2) should indicate where this map is located within the document.

► RISK APPENDIX G

The MsCIP used a risk-based planning approach to assess and characterize the public and stakeholder's risks related to existing and future without-project conditions, the potential risks, uncertainties and consequences associated with proposed or recommended measures. The COE used a "Risk-Informed Decision Framework" (RIDF) to request and capture information (environmental, societal, economic, etc) from various stakeholders and the public regarding the risks, costs and consequences of flood control, coastal restoration and hurricane protection. EPA participated in the process with various other federal and state agencies. The framework also involved weighting or ranking of our respective priorities. The COE was then able to provide quick interagency feedback regarding our preferences on specific environmental, social, economic and public health metrics. This information was then used collectively in the analysis, evaluation, comparison of alternatives, and the selection of final project recommendations. EPA

commends the COE on its ability to integrate sound science, state of the art technology, and stakeholder involvement in a relatively seamless and transparent process designed to find solutions to reduce the potential for continued residual risk from flood and storm surge inundation, coastal wetlands loss and degradation, erosion and saltwater intrusion, in ways that would promote greater resiliency in the future.

► **BARRIER ISLANDS APPENDIX H**

The Barrier Island Appendix H should discuss the COE's "Best Use of Dredged Material" with emphasis that clean sands from "new work" (e.g., deepening), as opposed to fines from "maintenance work", be considered first for use on the renourishment of the Barrier Islands. For example, newly exposed sands associated with the Gulfport expansion permit (out on public notice since 2007), which identified upland or an offshore ODMDS for disposal, might be suitable sands for island renourishment. Increased coordination between the Mobile District Planning, Operations, and Maintenance Divisions should help efficiently and effectively find ways of maximizing the best use of dredged material.

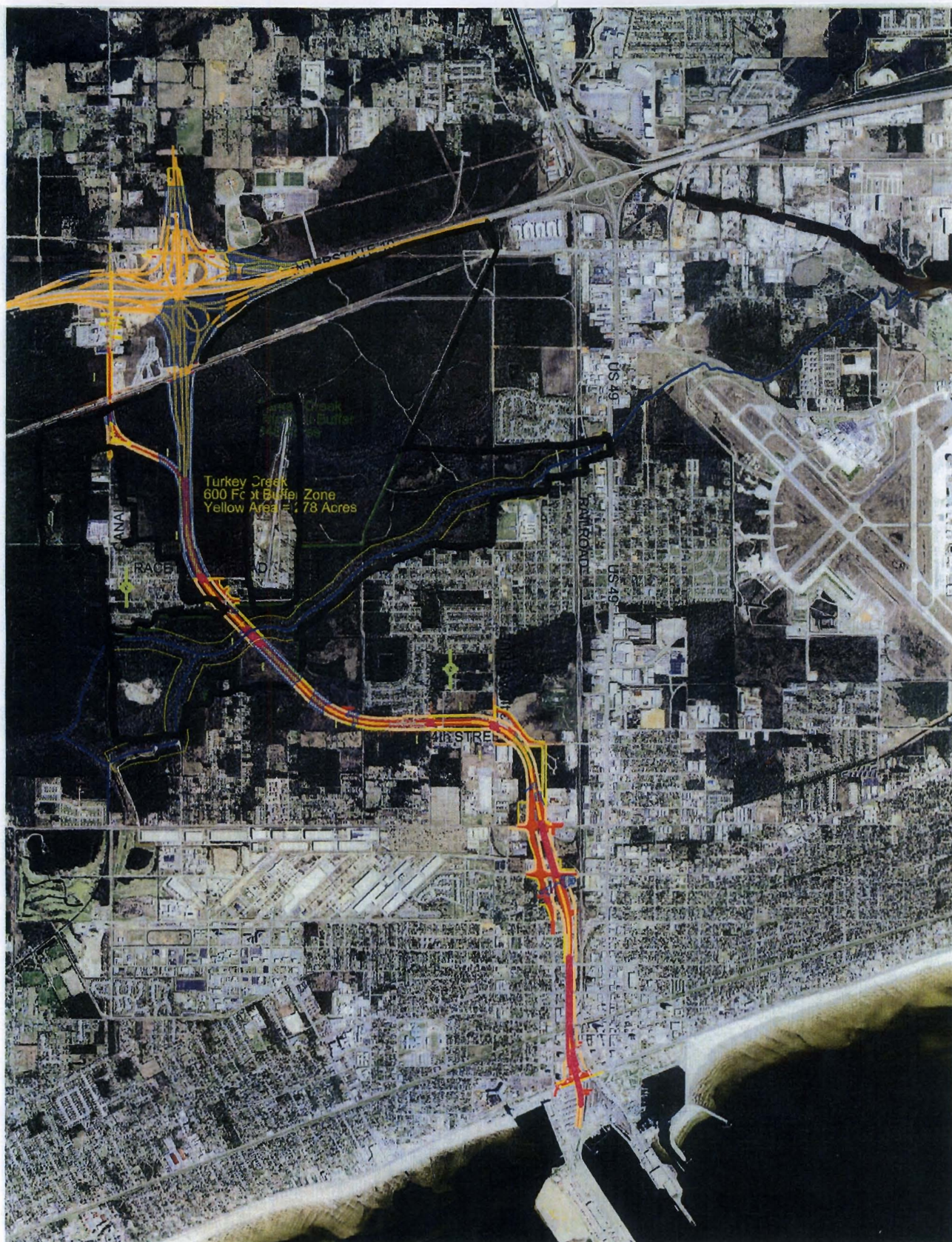


FIGURE 1:
Proposed MDOT Lands (1,625 ac) in Turkey Crk.

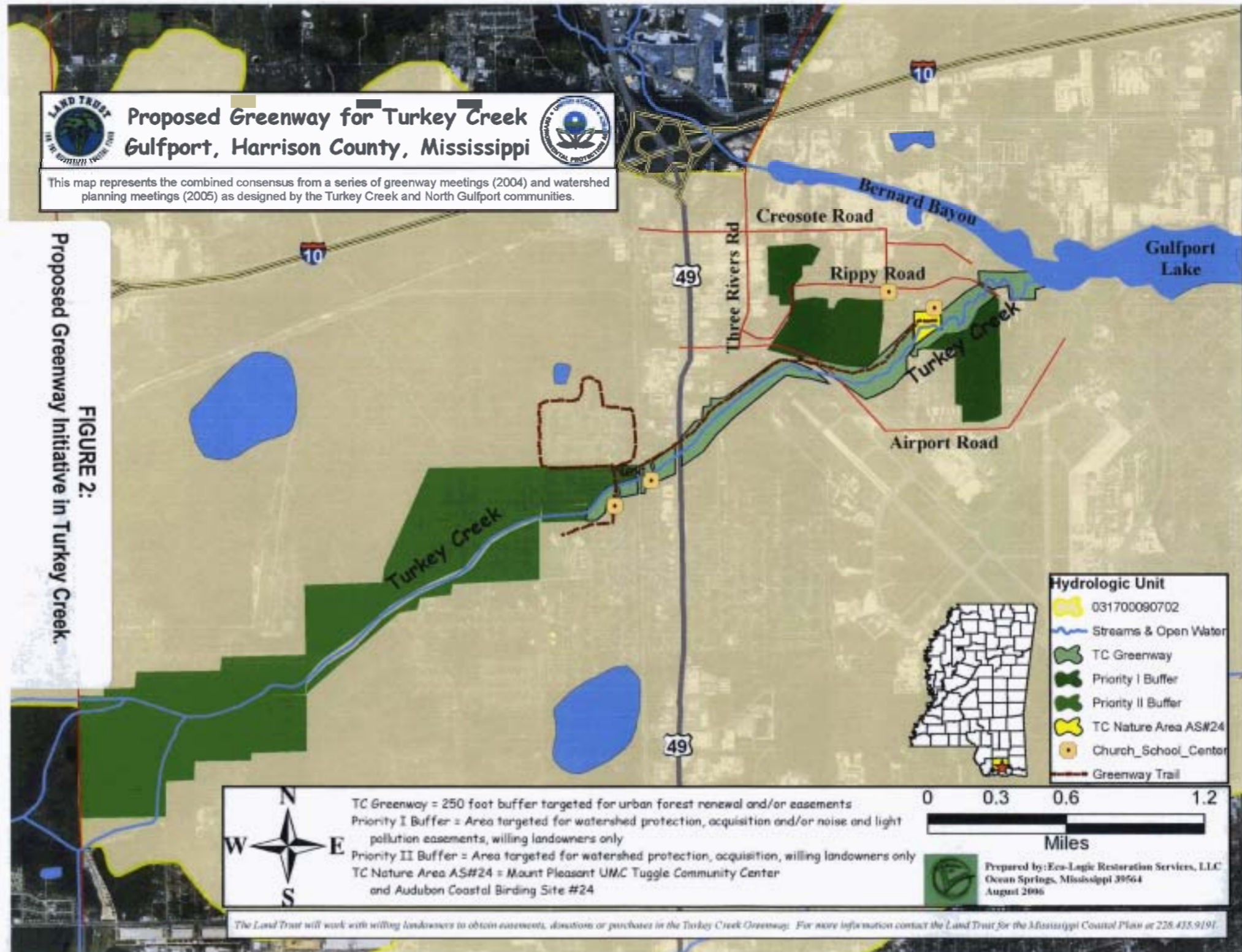


Proposed Greenway for Turkey Creek Gulfport, Harrison County, Mississippi



This map represents the combined consensus from a series of greenway meetings (2004) and watershed planning meetings (2005) as designed by the Turkey Creek and North Gulfport communities.

FIGURE 2:
Proposed Greenway Initiative in Turkey Creek.



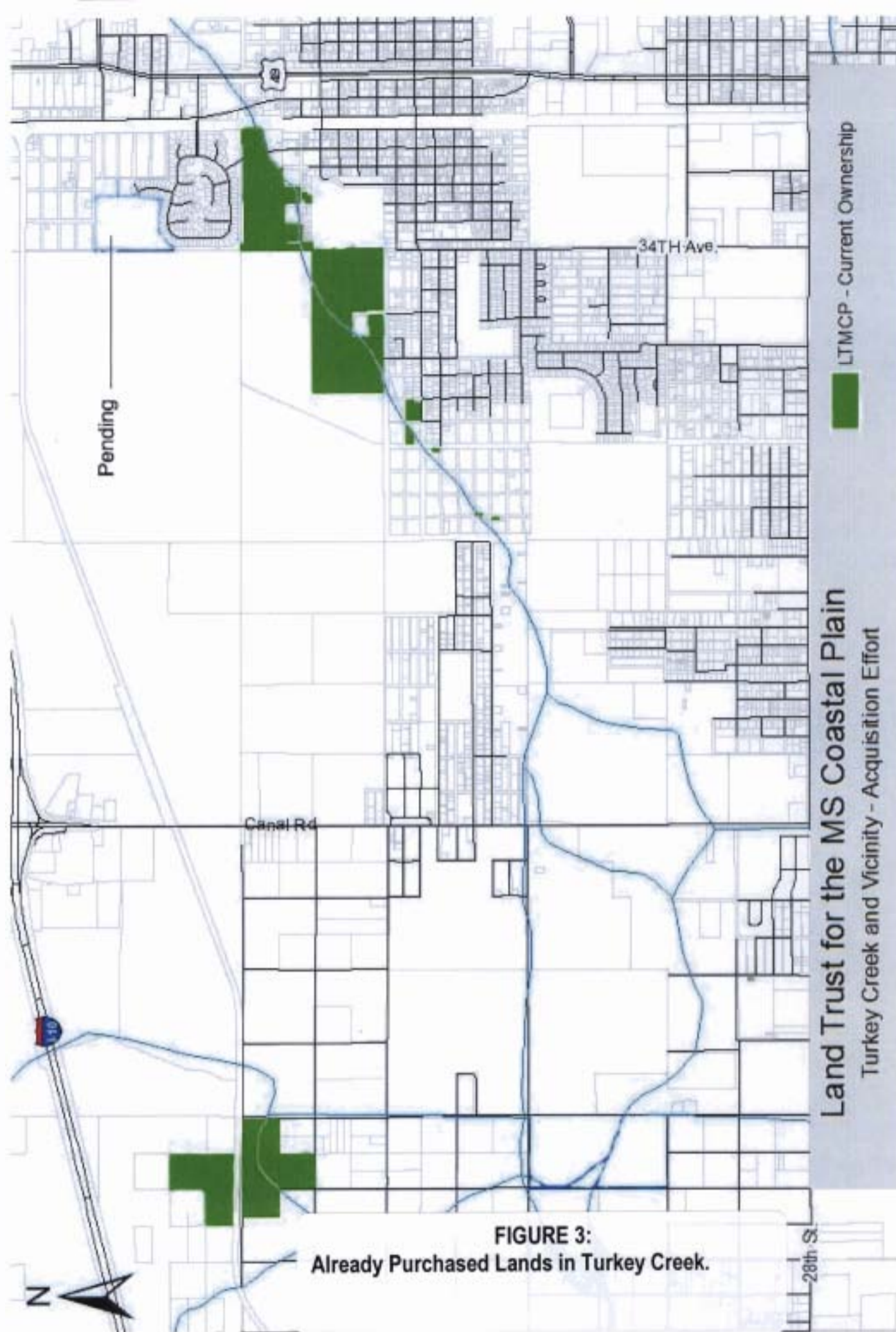


FIGURE 3:
Already Purchased Lands in Turkey Creek.